

Recycled Water Saves Watts?

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Water recycling not only saves fresh potable water supplies, but also conserves energy. In California, pumping water out of natural sources, conveying it to areas of use, treating and distributing it to customers, and treating wastewater accounts for one of the state's largest energy uses. Improving the efficiency with which water is used provides an important opportunity to increase related energy efficiency.

Recycled water use has a dual benefit of adding a reliable source of water for many uses (mainly non-potable uses) and improving the state's energy use efficiency. Advancing the use of recycled water in thirsty Southern California would help greatly reduce the region's reliance on imported supplies from the north and from the Colorado River. In addition to saving conventional water supplies

and contributing to the restoration of the fragile Delta ecosystem, the use of recycled water may also prove to be less



energy-demanding than other alternatives. Studies have shown that pumping water to Metropolitan Southern California from the State Water Project over the Tehachapi Mountains or through the Colorado River Aqueduct requires, respectively, about 3,000 kilowatt-hours and about 2,000 kilowatt-hours per acre-foot of delivered water. These numbers are significantly higher than the supplemental energy needed (beyond discharge requirements)

for water recycling, which is reported to be less than 500 kilowatt-hours per acre-foot of recycled water produced for many non-potable uses and about 1,200 kilowatt-hours for recycled water produced through membrane processes, such as reverse osmosis.

When compared to importing water from Northern California, a water recycling project the size of the Groundwater Replenishment System in Orange County (78,000 acre-feet in Phase I) is estimated to generate energy savings of about 140 million kilowatt-hours annually or enough energy to serve approximately 21,300 homes each year. So, the expansion of recycled water use will not only reduce the pressure on California's precious fresh water resources, but also help save millions of watts.